



1

SEQUENCE LISTING

RECEIVED

TECHNICAL

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<120> NON-IDENTICAL GENES AND THEIR APPLICATION IN
IMPROVED MOLECULAR ADJUVANTS

<130> 37945-0008

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<150> PCT/GB98/03918
<151> 1998-12-30

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<160> 49

<170> PatentIn version 2.1

<210> 1
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<220>
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 <222> (78)
 <223> a, c, g or t

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 <222> (81)
 <223> a, c, g or t

<400> 1
 caccgagcc atatgagatc tacnccwgcg ggntchggng arcaraayat gatyggnatg 60
 acnccwacng tnatygcngt ncactacctg gaccagaccg 100

<210> 2
 <211> 94
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<220>
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<220>
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 <222> (19)
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<220>
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 <222> (40)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (61)
 <223> a, c, g or t

<400> 2
 ggccagctgc tgggtrtanc cyttyttrat vagytcvagn gcytcytcgcytgyt 60
 nccraaytty tcccaytgyt cggctctgggc cagg 94

<210> 3
 <211> 93
 <212> DNA
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<220>
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<220>
 <221> modified_base
 <222> (35)
 <223> a, c, g or t

<220>
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 <222> (41)
 <223> a, c, g or t

<220>
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 <222> (44)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (68)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (77)
 <223> a, c, g or t

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cccagcagct ggccttyaar carccwtcht chgcntaygc ngcnttyaay aaycgyccwc	60
cwtchacntg gctbacngcc tacgtgggtca agg	93

<210> 4
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<220>
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 <223> a, c, g or t

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<222> (38)
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 <223> a, c, g or t

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 <222> (89)
 <223> a, c, g or t

<400> 4
 ccggcttctg cttctccagr atvagccayt tnacngcncc rcavagnacg tgdgartcra 60
 tngcratvag rttngcngcv agdgaraana ccttgaccac gtaggc 106

<210> 5
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 <212> DNA
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<220>
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<220>
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 <222> (22)
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<220>
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 <222> (25)
 <223> a, c, g or t

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 <223> a, c, g or t

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<222> (46)
 <223> a, c, g or t

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 <222> (67)
 <223> a, c, g or t

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 <222> (70)
 <223> a, c, g or t

<220>
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 <222> (76)
 <223> a, c, g or t

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 ggagaagcag aagccggayg gngtnttyca rgargayggn ccwgtnatyc accargarat 60
 gatyggnggn ttycgnaacg ccaaggaggc agatg 95

<210> 6
 <211> 100
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz6

<220>
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 <223> a, c, g or t

<220>
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 <222> (25)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (43)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (55)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (64)
 <223> a, c, g or t

<220>
 <221> modified_base

<222> (70)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (73)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (82)
 <223> a, c, g or t

<400> 6	
gctcccagga aggcttrttna cytgnccytc rcaratrtrcr cgngcytcyt gvagngcrat	60
vagnacraan gcngtvagdgc anacatctgc ctcttggcg	100

<210> 7
 <211> 101
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz7

<220>
 <221> modified_base
 <222> (26)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (29)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (44)
 <223> a, c, g or t

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 <221> modified_base
 <222> (74)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (77)
 <223> a, c, g or t

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 <221> modified_base
 <222> (80)
 <223> a, c, g or t

<220>
 <221> modified_base

<222> (86)

<223> a, c, g or t

<400> 7

gccttcctgg gagcatyaay aargcnggng artayatyga rgcntchtay atgaayctbc 60
arcgyccwta yacngtngcn atygcnggggt atgccttggc c 101

<210> 8

<211> 99

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA sequence of Fuz8

<220>

<221> modified_base

<222> (34)

<223> a, c, g or t

<220>

<221> modified_base

<222> (37)

<223> a, c, g or t

<220>

<221> modified_base

<222> (52)

<223> a, c, g or t

<220>

<221> modified_base

<222> (55)

<223> a, c, g or t

<400> 8

ctggtcaggc tcttcccarc grttcgrtc yttngcngtr ttvagraayt tnccnagrta 60
wggytcytcv agytrrttca tvagggccag ggcataccc 99

<210> 9

<211> 100

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA sequence of Fuz9

<220>

<221> modified_base

<222> (30)

<223> a, c, g or t

<220>

<221> modified_base

<222> (36)

<223> a, c, g or t

<220>
 <221> modified_base
 <222> (39)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (48)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (57)
 <223> a, c, g or t

<400> 9
 gaggagcctg accagcarct btayaaygtn gargcnacnt chtaygcncb bctbgcnctb 60
 ctbctbctba argayttyga ytchgtgccc cctgtagtgc 100

<210> 10
 <211> 95
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz10

<220>
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 <222> (17)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (26)
 <223> a, c, g or t

<220>
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 <222> (29)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (35)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (41)
 <223> a, c, g or t

<220>
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 <222> (47)
 <223> a, c, g or t

<220>
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 <222> (50)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (53)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (80)
 <223> a, c, g or t

<400> 10
 gggccaaggc ttggaanacc atraangtng cytgngtdga nccrtanccn ccncctart 60
 arcgytgytc rttvagccan cgcactacag gggggc 95

<210> 11
 <211> 76
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz11

<220>
 <221> modified_base
 <222> (25)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (31)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (49)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (61)
 <223> a, c, g or t

<400> 11
 ccaagccttg gcccartayc aracngaygt nccwgaycac aargayctna ayatggaygt 60
 ntccttcac ctcccc 76

<210> 12
 <211> 83
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz12

<220>
 <221> modified_base
 <222> (31)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (34)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (37)
 <223> a, c, g or t

<220>
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 <222> (40)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (46)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (49)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (52)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (55)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (61)
 <223> a, c, g or t

<400> 12
 cccagagccg gccggttatc aggatccdga nccnccnccn ccdgancnc cncnccdga 60
 nccdga dgag gggaggtgga agg 83

<210> 13
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DNA sequence of Fuz13

<400> 13
ggctgattct cgagaagcag aagc 24

<210> 14
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DNA sequence of Fuz14

<400> 14
gcttctgctt ctcgagaatc agcc 24

<210> 15
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DNA sequence of Fuz15

<400> 15
gccttcccgg gagcatcaac aaggc 25

<210> 16
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DNA sequence of Fuz16

<400> 16
gccttggtga tgctcccggg aaggc 25

<210> 17
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DNA sequence of Fuz17

<400> 17
ggagcctgat cagcagctct acaacg 26

<210> 18
<211> 26

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz18

 <400> 18
 cgttgtagag ctgctgatca ggctcc 26

 <210> 19
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz19

 <400> 19
 gggtacaccc agcagctggc c 21

 <210> 20
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz20

 <400> 20
 ggccagctgc tgggtgtacc c 21

 <210> 21
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz21

 <400> 21
 ggtgttccaa gctttggccc 20

 <210> 22
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz22

 <400> 22
 gggccaaagc ttggaacacc 20

<210> 23
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz23

<400> 23
 cacccgagcc atatgag

17

<210> 24
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz24

<400> 24
 cccagagccg gccggttatc aggatcc

27

<210> 25
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of Fuz25

<400> 25
 cccagagccg gccggttagc aggatcc

27

<210> 26
 <211> 308
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid sequence
 of cysteine-tailed C3d monomer (C3d1-cys) expressed in
 E. coli

<400> 26
 Met Ala Ser Gly Ser Thr Pro Ala Gly Ser Gly Glu Gln Asn Met Ile
 1 5 10 15
 Gly Met Thr Pro Thr Val Ile Ala Val His Tyr Leu Asp Gln Thr Glu
 20 25 30
 Gln Trp Glu Lys Phe Gly Ile Glu Lys Arg Gln Glu Ala Leu Glu Leu
 35 40 45
 Ile Lys Lys Gly Tyr Thr Gln Gln Leu Ala Phe Lys Gln Pro Ser Ser
 50 55 60

Ala	Tyr	Ala	Ala	Phe	Asn	Asn	Arg	Pro	Pro	Ser	Thr	Trp	Leu	Thr	Ala		
65					70					75					80		
Tyr	Val	Val	Lys	Val	Phe	Ser	Leu	Ala	Ala	Gln	Leu	Ile	Ala	Ile	Asp		
				85					90					95			
Ser	His	Val	Leu	Cys	Gly	Ala	Val	Lys	Trp	Leu	Ile	Leu	Glu	Lys	Gln		
			100					105					110				
Lys	Pro	Asp	Gly	Val	Phe	Gln	Glu	Asp	Gly	Pro	Val	Ile	His	Gln	Glu		
		115					120					125					
Met	Ile	Gly	Gly	Phe	Arg	Asn	Ala	Lys	Glu	Ala	Asp	Val	Ser	Leu	Thr		
	130					135					140						
Ala	Phe	Val	Leu	Ile	Ala	Leu	Gln	Glu	Ala	Arg	Asp	Ile	Cys	Glu	Gly		
145					150					155					160		
Gln	Val	Asn	Ser	Leu	Pro	Gly	Ser	Ile	Asn	Lys	Ala	Gly	Glu	Tyr	Ile		
				165					170					175			
Glu	Ala	Ser	Tyr	Met	Asn	Leu	Gln	Arg	Pro	Tyr	Thr	Val	Ala	Ile	Ala		
			180					185					190				
Gly	Tyr	Ala	Leu	Ala	Leu	Met	Asn	Lys	Leu	Glu	Glu	Pro	Tyr	Leu	Gly		
		195					200					205					
Lys	Phe	Leu	Asn	Thr	Ala	Lys	Asp	Arg	Asn	Arg	Trp	Glu	Glu	Pro	Asp		
	210					215					220						
Gln	Gln	Leu	Tyr	Asn	Val	Glu	Ala	Thr	Ser	Tyr	Ala	Leu	Leu	Ala	Leu		
225					230					235					240		
Leu	Leu	Leu	Lys	Asp	Phe	Asp	Ser	Val	Pro	Pro	Val	Val	Arg	Trp	Leu		
				245					250					255			
Asn	Glu	Gln	Arg	Tyr	Tyr	Gly	Gly	Gly	Tyr	Gly	Ser	Thr	Gln	Ala	Thr		
			260					265					270				
Phe	Met	Val	Phe	Gln	Ala	Leu	Ala	Gln	Tyr	Gln	Thr	Asp	Val	Pro	Asp		
		275					280					285					
His	Asp	Leu	Asn	Met	Asp	Val	Ser	Phe	His	Leu	Pro	Ser	Ser	Gly	Ser		
	290					295					300						
Glu	Glu	Phe	Cys														
305																	

<210> 27

<211> 929

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid sequence
of (C3d)3 expressed in E. coli

<400> 27

Met Ala Ser Gly Ser Thr Pro Ala Gly Ser Gly Glu Gln Asn Met Ile
 1 5 10 15
 Gly Met Thr Pro Thr Val Ile Ala Val His Tyr Leu Asp Gln Thr Glu
 20 25 30
 Gln Trp Glu Lys Phe Gly Ile Glu Lys Arg Gln Glu Ala Leu Glu Leu
 35 40 45
 Ile Lys Lys Gly Tyr Thr Gln Gln Leu Ala Phe Lys Gln Pro Ser Ser
 50 55 60
 Ala Tyr Ala Ala Phe Asn Asn Arg Pro Pro Ser Thr Trp Leu Thr Ala
 65 70 75 80
 Tyr Val Val Lys Val Phe Ser Leu Ala Ala Gln Leu Ile Ala Ile Asp
 85 90 95
 Ser His Val Leu Cys Gly Ala Val Lys Trp Leu Ile Leu Glu Lys Gln
 100 105 110
 Lys Pro Asp Gly Val Phe Gln Glu Asp Gly Pro Val Ile His Gln Glu
 115 120 125
 Met Ile Gly Gly Phe Arg Asn Ala Lys Glu Ala Asp Val Ser Leu Thr
 130 135 140
 Ala Phe Val Leu Ile Ala Leu Gln Glu Ala Arg Asp Ile Cys Glu Gly
 145 150 155 160
 Gln Val Asn Ser Leu Pro Gly Ser Ile Asn Lys Ala Gly Glu Tyr Ile
 165 170 175
 Glu Ala Ser Tyr Met Asn Leu Gln Arg Pro Tyr Thr Val Ala Ile Ala
 180 185 190
 Gly Tyr Ala Leu Ala Leu Met Asn Lys Leu Glu Glu Pro Tyr Leu Gly
 195 200 205
 Lys Phe Leu Asn Thr Ala Lys Asp Arg Asn Arg Trp Glu Glu Pro Asp
 210 215 220
 Gln Gln Leu Tyr Asn Val Glu Ala Thr Ser Tyr Ala Leu Leu Ala Leu
 225 230 235 240
 Leu Leu Leu Lys Asp Phe Asp Ser Val Pro Pro Val Val Arg Trp Leu
 245 250 255
 Asn Glu Gln Arg Tyr Tyr Gly Gly Gly Tyr Gly Ser Thr Gln Ala Thr
 260 265 270
 Phe Met Val Phe Gln Ala Leu Ala Gln Tyr Gln Thr Asp Val Pro Asp
 275 280 285
 His Asp Leu Asn Met Asp Val Ser Phe His Leu Pro Ser Ser Gly Ser
 290 295 300

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Ser Thr Pro Ala Gly
 305 310 315 320
 Ser Gly Glu Gln Asn Met Ile Gly Met Thr Pro Thr Val Ile Ala Val
 325 330 335
 His Tyr Leu Asp Gln Thr Glu Gln Trp Glu Lys Phe Gly Ile Glu Lys
 340 345 350
 Arg Gln Glu Ala Leu Glu Leu Ile Lys Lys Gly Tyr Thr Gln Gln Leu
 355 360 365
 Ala Phe Lys Gln Pro Ser Ser Ala Tyr Ala Ala Phe Asn Asn Arg Pro
 370 375 380
 Pro Ser Thr Trp Leu Thr Ala Tyr Val Val Lys Val Phe Ser Leu Ala
 385 390 395 400
 Ala Gln Leu Ile Ala Ile Asp Ser His Val Leu Cys Gly Ala Val Lys
 405 410 415
 Trp Leu Ile Leu Glu Lys Gln Lys Pro Asp Gly Val Phe Gln Glu Asp
 420 425 430
 Gly Pro Val Ile His Gln Glu Met Ile Gly Gly Phe Arg Asn Ala Lys
 435 440 445
 Glu Ala Asp Val Ser Leu Thr Ala Phe Val Leu Ile Ala Leu Gln Glu
 450 455 460
 Ala Arg Asp Ile Cys Glu Gly Gln Val Asn Ser Leu Pro Gly Ser Ile
 465 470 475 480
 Asn Lys Ala Gly Glu Tyr Ile Glu Ala Ser Tyr Met Asn Leu Gln Arg
 485 490 495
 Pro Tyr Thr Val Ala Ile Ala Gly Tyr Ala Leu Ala Leu Met Asn Lys
 500 505 510
 Leu Glu Glu Pro Tyr Leu Gly Lys Phe Leu Asn Thr Ala Lys Asp Arg
 515 520 525
 Asn Arg Trp Glu Glu Pro Asp Gln Gln Leu Tyr Asn Val Glu Ala Thr
 530 535 540
 Ser Tyr Ala Leu Leu Ala Leu Leu Leu Lys Asp Phe Asp Ser Val
 545 550 555 560
 Pro Pro Val Val Arg Trp Leu Asn Glu Gln Arg Tyr Tyr Gly Gly Gly
 565 570 575
 Tyr Gly Ser Thr Gln Ala Thr Phe Met Val Phe Gln Ala Leu Ala Gln
 580 585 590
 Tyr Gln Thr Asp Val Pro Asp His Asp Leu Asn Met Asp Val Ser Phe
 595 600 605

His	Leu	Pro	Ser	Ser	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	610	615	620
Ser	Gly	Ser	Thr	Pro	Ala	Gly	Ser	Gly	Glu	Gln	Asn	Met	Ile	Gly	Met	625	630	635
Thr	Pro	Thr	Val	Ile	Ala	Val	His	Tyr	Leu	Asp	Gln	Thr	Glu	Gln	Trp	645	650	655
Glu	Lys	Phe	Gly	Ile	Glu	Lys	Arg	Gln	Glu	Ala	Leu	Glu	Leu	Ile	Lys	660	665	670
Lys	Gly	Tyr	Thr	Gln	Gln	Leu	Ala	Phe	Lys	Gln	Pro	Ser	Ser	Ala	Tyr	675	680	685
Ala	Ala	Phe	Asn	Asn	Arg	Pro	Pro	Ser	Thr	Trp	Leu	Thr	Ala	Tyr	Val	690	695	700
Val	Lys	Val	Phe	Ser	Leu	Ala	Ala	Gln	Leu	Ile	Ala	Ile	Asp	Ser	His	705	710	715
Val	Leu	Cys	Gly	Ala	Val	Lys	Trp	Leu	Ile	Leu	Glu	Lys	Gln	Lys	Pro	725	730	735
Asp	Gly	Val	Phe	Gln	Glu	Asp	Gly	Pro	Val	Ile	His	Gln	Glu	Met	Ile	740	745	750
Gly	Gly	Phe	Arg	Asn	Ala	Lys	Glu	Ala	Asp	Val	Ser	Leu	Thr	Ala	Phe	755	760	765
Val	Leu	Ile	Ala	Leu	Gln	Glu	Ala	Arg	Asp	Ile	Cys	Glu	Gly	Gln	Val	770	775	780
Asn	Ser	Leu	Pro	Gly	Ser	Ile	Asn	Lys	Ala	Gly	Glu	Tyr	Ile	Glu	Ala	785	790	795
Ser	Tyr	Met	Asn	Leu	Gln	Arg	Pro	Tyr	Thr	Val	Ala	Ile	Ala	Gly	Tyr	805	810	815
Ala	Leu	Ala	Leu	Met	Asn	Lys	Leu	Glu	Glu	Pro	Tyr	Leu	Gly	Lys	Phe	820	825	830
Leu	Asn	Thr	Ala	Lys	Asp	Arg	Asn	Arg	Trp	Glu	Glu	Pro	Asp	Gln	Gln	835	840	845
Leu	Tyr	Asn	Val	Glu	Ala	Thr	Ser	Tyr	Ala	Leu	Leu	Ala	Leu	Leu	Leu	850	855	860
Leu	Lys	Asp	Phe	Asp	Ser	Val	Pro	Pro	Val	Val	Arg	Trp	Leu	Asn	Glu	865	870	875
Gln	Arg	Tyr	Tyr	Gly	Gly	Gly	Tyr	Gly	Ser	Thr	Gln	Ala	Thr	Phe	Met	885	890	895
Val	Phe	Gln	Ala	Leu	Ala	Gln	Tyr	Gln	Thr	Asp	Val	Pro	Asp	His	Asp	900	905	910

Leu Asn Met Asp Val Ser Phe His Leu Pro Ser Ser Gly Ser Glu Glu
 915 920 925

Phe

<210> 28

<211> 11

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: BgIII linker sequence

<400> 28

tatggctagc g

11

<210> 29

<211> 13

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NdeI linker sequence

<400> 29

accgatcgcc tag

13

<210> 30

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA sequence of
 PCR forward primer

<400> 30

gaattcctag cttgcttg

18

<210> 31

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA sequence of
 PCR reverse primer

<400> 31

tctagagtcg accagac

17

<210> 32

<211> 3331

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA sequence of
pBC66-01

<400> 32

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gagcgcagaa	gtggctctgc	aactttatcc	gcctccatcc	agtctattaa	ttgttgccgg	300
gaagctagag	taagtagttc	gccagttaat	agtttgcgca	acgttggtgc	cattgctaca	360
ggcatcgtgg	tgtcacgctc	gtcgtttgg	atggcttcat	tcagctccgg	ttcccaacga	420
tcaaggcgag	ttacatgatc	ccccatggtg	tgcaaaaaag	cggttagctc	cttcggtcct	480
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cataattctc	ttactgtcat	gccatccgta	agatgctttt	ctgtgactgg	tgagtactca	600
accaagtcac	tctgagaata	gtgtatgcgg	cgaccgagtt	gctcttgccc	ggcgtcaaca	660
cgggataata	ccgcgccaca	tagcagaact	ttaaaagtgc	tcattcattgg	aaaacgttct	720
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```

cataaggact tgaacatgga tgtgtccttc cacctcccca gcagtggatc tgaagagttc 3060
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```

```

<210> 33
<211> 30
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: DNA sequence of
      site directed mutagenesis oligonucleotide primer
      used to make pBP66-06

```

```

<400> 33
ccagcagtgg atcctgctag agttctgagg 30

```

```

<210> 34
<211> 30
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: DNA sequence of
      site directed mutagenesis primer used to make pBP-06

```

```

<400> 34
cctcagaact ctagcaggat ccactgctgg 30

```

```

<210> 35
<211> 32
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: DNA sequence of
      oligonucleotide #50391

```

```

<400> 35
ccagcagtgg ctcttcctgc ttctgcagga tc 32

```

```

<210> 36
<211> 32
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: DNA sequence of
      oligonucleotide #50392

```

<400> 36
gacccctgcag aagcaggaag agccactgct gg

32

<210> 37
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Amino acid sequence
of (C3d)3 expressed in baculovirus/Sf9

<400> 37
Met Ala Leu Trp Met Arg Leu Leu Pro Leu Leu Ala Leu Leu Ala Leu
1 5 10 15
Trp Ala Pro Ala Pro Thr Arg Ala Gly Ser Arg Ser Thr Pro Ala Gly
20 25 30
Ser Gly Glu Gln Asn Met Ile Gly Met Thr Pro Thr Val Ile Ala Val
35 40 45
His Tyr Leu Asp Gln Thr Glu Gln Trp Glu Lys Phe Gly Ile Glu Lys
50 55 60
Arg Gln Glu Ala Leu Glu Leu Ile Lys Lys Gly Tyr Thr Gln Gln Leu
65 70 75 80
Ala Phe Lys Gln Pro Ser Ser Ala Tyr Ala Ala Phe Asn Asn Arg Pro
85 90 95
Pro Ser Thr Trp Leu Thr Ala Tyr Val Val Lys Val Phe Ser Leu Ala
100 105 110
Ala Gln Leu Ile Ala Ile Asp Ser His Val Leu Cys Gly Ala Val Lys
115 120 125
Trp Leu Ile Leu Glu Lys Gln Lys Pro Asp Gly Val Phe Gln Glu Asp
130 135 140
Gly Pro Val Ile His Gln Glu Met Ile Gly Gly Phe Arg Asn Ala Lys
145 150 155 160
Glu Ala Asp Val Ser Leu Thr Ala Phe Val Leu Ile Ala Leu Gln Glu
165 170 175
Ala Arg Asp Ile Cys Glu Gly Gln Val Asn Ser Leu Pro Gly Ser Ile
180 185 190
Asn Lys Ala Gly Glu Tyr Ile Glu Ala Ser Tyr Met Asn Leu Gln Arg
195 200 205
Pro Tyr Thr Val Ala Ile Ala Gly Tyr Ala Leu Ala Leu Met Asn Lys
210 215 220
Leu Glu Glu Pro Tyr Leu Gly Lys Phe Leu Asn Thr Ala Lys Asp Arg
225 230 235 240

Asn	Arg	Trp	Glu	Glu	Pro	Asp	Gln	Gln	Leu	Tyr	Asn	Val	Glu	Ala	Thr
				245					250					255	
Ser	Tyr	Ala	Leu	Leu	Ala	Leu	Leu	Leu	Leu	Lys	Asp	Phe	Asp	Ser	Val
			260					265					270		
Pro	Pro	Val	Val	Arg	Trp	Leu	Asn	Glu	Gln	Arg	Tyr	Tyr	Gly	Gly	Gly
		275					280					285			
Tyr	Gly	Ser	Thr	Gln	Ala	Thr	Phe	Met	Val	Phe	Gln	Ala	Leu	Ala	Gln
	290					295					300				
Tyr	Gln	Thr	Asp	Val	Pro	Asp	His	Asp	Leu	Asn	Met	Asp	Val	Ser	Phe
305					310					315					320
His	Leu	Pro	Ser	Ser	Gly	Ser	Glu	Glu	Phe						
				325					330						

```
<210> 38
<211> 36
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: DNA sequence of
oligo for modification of bacterial vector pBroc413

<400> 38
tatgaqatct cccgggggat cctagcggcc gctgca 36

```
<210> 39
<211> 30
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: DNA sequence of
oligo for modification of bacterial vector pBroc413

<400> 39
gcggccgcta ggatcccccg ggagatctca 30

```
<210> 40
<211> 6
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: Amino acid
sequence of peptide for trifunctional linker

```
<400> 40
Ala Lys Ala Lys Ala Lys
1             5
```

<210> 41
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of
 site directed mutagenesis oligonucleotide used to
 modify pBP66-06

<400> 41
 ccacccgagc cggtaccaga tcta

24

<210> 42
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of
 site directed mutagenesis oligonucleotide used
 to modify pBP66-06

<400> 42
 ggtagatctg gtaccggctc gggtagg

26

<210> 43
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of
 PCR primer used to amplify C3d monomer

<400> 43
 cgagccatat gggtaccacc ccagc

25

<210> 44
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA sequence of
 PCR primer used to amplify C3d monomer

<400> 44
 ggtagcagg taccggaacc ggtagcagg taccggaacc

40

<210> 45
 <211> 36

<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA sequence of mutagenic oligo giving addition of C-terminal cystein

<400> 45
ggatctgaag agttctgctg aggatcctat taaagc

36

<210> 46
<211> 36
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA sequence of mutagenic oligo giving addition of C-terminal cystein

<400> 46
gctttaatag gacctcagc agaactcttc agatcc

36

<210> 47
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic linker peptide sequence

<400> 47
Gly Gly Gly Gly Ser
1 5

<210> 48
<211> 16
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic linker peptide sequence

<400> 48
Ser Ser Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Ser
1 5 10 15

<210> 49
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
trifunctional linker peptide sequence

<400> 49

Lys Ala Lys Ala Lys

1

5